DOCUMENT RESUME

ED 043 292 HE 001 750

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TITLE Earnings of Professional Women at Indiana University.
INSTITUTION Indiana Univ., Bloomington.
PUB DATE [69]
NOTE 21p.

EDRS PRICE EDRS Price MF-$0.25 HC-$1.15
DESCRIPTORS College Faculty, *Discriminatory Attitudes (Social), *Feminism, *Higher Education, *Salaries, Social Discrimination, *Women Professors
IDENTIFIERS *Indiana University

ABSTRACT

Recent economic research has uncovered increasing evidence that women earn less than men in our society, even when they have similar qualifications and perform similar jobs. This study investigated whether a similar pattern of economic discrimination prevailed at Indiana University. Salaries were compared of men and women who had faculty or faculty-administrative appointments in December 1968, on the basis of: (1) type of appointment; (2) rank; (3) school in which the appointment was held; (4) level of education as measured by the highest degree held; and (5) professional experience as measured by the length of time an individual had taught at the University and the length of time to complete his or her education. The difference in gross monthly salaries between men and women was $375.61, and, with all variables held constant, women could expect to earn about $100 per month less than a man. The difference in gross income is partly because women tend to held fewer advanced degrees, have lower academic ranks and fewer administrative appointments, and tend to teach in schools where average salaries are relatively low. The fact that women still earn $100 less per month suggests a systematic bias in the University's methods of determining individual salaries that works to the detriment of women. (AF)

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ED043292

EARNINGS OF PROFESSIONAL WOMEN AT INDIANA UNIVERSITY*

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Recent economic research has uncovered increasing evidence that women earn less than men in our society, even when they have similar qualifications and perform similar kinds of jobs.[1] In order to see whether this pattern of economic "discrimination" against women prevails at Indiana University, we compiled data on faculty salaries from the University payroll of December 31, 1968, and compared it with information on individuals' professional qualifications which might be expected to affect their earnings. From the faculty register, we were able to obtain information on each person's type of appointment (i.e., faculty, or faculty-administrative), rank, "occupation" (i.e., in what school he or she held an appointment), level of education (measured by highest academic degree held), and professional "experience" (measured by the length of time an individual has taught at I.U. and the length of time since he or she completed his or her education). Obviously, these data do not cover all the factors which help determine people's qualifications for teaching and research; specifically, no account is taken of

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*We are much indebted to Jeffery Green, for comments on our statistical analysis, and to Ken Rader, for data collection and compilation. We alone are responsible for any errors which remain.

[1] See, for example, Emanuel Melichar, "Factors Affecting 1966 Basic Salaries in the National Register Professions," American Economic Review, Vol. LVIII, No. 5, part 2, Supplement, December, 1968; Bayer and Astin, "Sex Differences in Academic Rank and Salary Among Science Doctorates in Teaching," Journal of Human Resources, Spring, 1968; G. B. McNally, "Patterns of Female Labor Force Activity," Industrial Relations, Vol. 7, No. 3, May 1968; and H. Sanborn, "Pay Differences Between Men and Women," Industrial and Lab or Relations Review, July, 1964.

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professional "productivity" or the quality of individuals' professional performance. However, we felt that the data were sufficiently comprehensive to warrent analysis and comparison with other studies.

Analysis: The Bloomington Faculty

After deleting individuals solely connected with academic administration and administration of the University's physical plant, and after deleting individuals for whom complete data could not be obtained, there remainded a population of 1289 faculty and joint faculty-administrative appointees on the Bloomington campus. The complete composition of the "Bloomington Faculty" is given in Table I.

In December, 1968, the average monthly gross salaries of men and women on the I.U. faculty in Bloomington were:

Men.....	$1410.10
Women.....	1034.49
Difference....	375.61

In order to ascertain how much of this difference was associated with observable differences in men's and women's professional qualifications, we regressed monthly salary on the independent variables mentioned previously (type of appointment, rank, sex, educational level, school, years since degree, and years at I.U.), these being expressed as dummy variables to allow for the discrete nature of the explanatory variables and expected nonlinear relationships.[2]

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[2]This technique is similar to that used by Melichar, op.cit. For a more complete description, see Emanuel Melichar, "Least-Squares Analysis of Economic Survey Data," 1965 Proceedings of the Business and Economic Statistics Section, American Statistical Association, 1965. In our own study, the regression equation takes the form:

$$Y=k + \left[(B_1D_1) + \ldots + (B_mD_m)\right] + \ldots + \left[(B_{m+1}R_1) + \ldots + (B_zR_q)\right]$$

where Y is monthly salary, k is the constant term, and D, R, etc. are sets of dummy variables, each set corresponding to an hypothesized explanatory factor (i.e., D might represent type of appointment, R might represent rank,

TABLE I

Frequency Distribution of the Bloomington Faculty
By Sex, Appointment, Rank, Educational Level, School, and Experience
December, 1968

	Men		Women		Total	
	No.	%	No.	%	No.	%
Sex	1114	86.4	175	13.6	1289	100
Appointment						
Faculty	834	74.9	155	88.6	989	76.7
Joint	280	25.1	20	11.4	300	23.3
		100.0		100.0		100.0
Rank						
Lecturer/Instructor	154	13.9	69	39.5	223	17.3
Ass't. Prof.	279	25.0	52	29.7	331	25.7
Assoc. Prof.	256	23.0	30	17.1	286	22.2
Full Prof.	408	36.6	24	13.7	432	33.5
Disting. Prof.	17	1.5	0	0.0	17	1.3
		100.0		100.0		100.0
Educational Level						
BA/BS	48	4.3	15	8.6	63	4.9
MA/MS	217	19.5	87	49.7	304	23.6
PhD	799	71.7	71	40.6	870	67.5
PhD's	50	4.5	2	1.1	52	4.0
		100.0		100.0		100.0
School						
Arts & Sciences	641	57.5	57	32.6	698	54.1
Business	93	8.3	1	0.6	94	7.3
Education	184	16.5	66	37.7	250	19.4
HPER	63	5.7	16	9.1	79	6.1
Law	24	2.2	.1	0.6	25	1.9
Library	9	0.8	8	4.6	17	1.3
Music	78	7.0	11	6.3	89	6.9
Social Service	7	0.6	12	6.8	19	1.5
Extension	7	0.6	3	1.7	10	0.8
Other	8	0.7	0	0.0	8	0.6
		99.9		100.0		99.9
Years Since Degree						
1- 5	319	28.6	59	33.7	378	29.3
6-10	247	22.2	31	17.7	278	21.6
11-15	162	14.5	28	16.0	190	14.7
16-20	149	13.4	20	11.4	169	13.1
21-25	67	6.0	15	8.6	82	6.4
OVER 25	170	15.3	22	12.6	192	14.9
		100.0		99.9		100.0

Years at I.U.	Men No.	Men %	Women No.	Women %	Total No.	Total %
1- 5	547	49.1	92	52.7	639	49.6
6-10	199	17.9	32	18.3	231	17.9
11-15	114	10.2	13	7.4	127	9.8
16-20	93	8.3	13	7.4	106	8.2
21-25	96	8.6	17	9.7	113	8.8
OVER 25	65	5.8	8	4.5	73	5.7
		99.9		100.0		100.0

We also used an alternative form of the regression equation in which we used the logarithm of salary as the dependent variable to measure the net effects of each independent variable in proportional instead of absolute terms. Here, we followed the Melichar analysis of professional salaries, expecting a better representation of salary structure from the logarithm model. Results of both regression models are presented in Table II. We found however, that use of the logarithm of salary as dependent variable increased the "explanatory power" of the model by only four and one-half percentage points.

In the first regression, the coefficient for the female category of the sex variable was -98.18, significantly different from zero at the 0.01 level. This may be interpreted as showing that, when one holds the other independent variables constant, women faculty members received $98.18 less per month than did male faculty members. To put it another way, a woman equivalent to a man in terms of all other variables included in the regression equation could expect to earn about $100 per month less than a man.

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etc.). Each set of dummy variables is further divided into categories into which an observation can be classified. Thus, if R represented the set of dummy variables describing rank, R_0 would represent the rank of lecturer/instructor, R_1 would represent the rank of assistant professor, etc. If an individual is classified in a particular category (e.g. assistant professor), the corresponding dummy variable (R_1) is assigned the value of 1 and all other dummy variables in the set (R_0, R_2, R_3, etc.) are assigned the value of 0. An individual is classified as belonging to only one category in each set of categories. R_0, D_0, etc. are excluded from the regression equation to avoid perfect linear relationships between the variables in each set. The B's are partial regression coefficients for the dummy variables. These coefficients may be interpreted as showing the net effect (on monthly salary) of an individual being in the category in question (e.g., assistant professor) rather than being in the reference category (the category for each set of variables which was omitted from the regression equation - e.g., lecturer /instructor) while holding the other independent variables constant.

TABLE II

1289 Bloomington Faculty
Partial Regression Coefficients

Variable Set	Category	Actual Salary Model Coefficient	STD Error	Significance	Log. Salary Model Coefficient	STD Error	Significance
Appointment	Faculty	-	-		-	-	
	Joint	126.05	17.37	.01	.03617	.00493	.01
Rank	Lecturer/Inst.	-	-		-	-	
	Asst. Prof.	111.20	27.34	.01	.06481	.00765	.01
	Assoc. Prof.	268.97	30.77	.01	.12003	.00861	.01
	Full Prof.	699.33	35.22	.01	.22801	.00985	.01
	Disting. Prof.	1,332.13	74.95	.01	.35782	.02096	.01
Sex	Male	-	-		-	-	
	Female	-98.18	21.76	.01	-.03876	.00608	.01
Ed. Level	BA/BS	-	-		-	-	
	MA/MS	83.69	34.26	.05	.04277	.00958	.01
	PhD	198.04	36.71	.01	.07924	.01028	.01
	PhD's	220.00	50.63	.01	.07779	.01417	.01
School	Arts & Sciences	-	-		-	-	
	Business	209.63	27.14	.01	.05868	.00760	.01
	Education	-61.17	18.90	.01	-.02020	.00530	.01
	HPER	-58.97	30.95	ns	-.01173	.00867	ns
	Law	253.67	52.48	.01	.07397	.01467	.01
	Library	82.97	60.84	ns	.03349	.01701	.05
	Music	-80.93	28.64	.01	-.01684	.00801	.05
	Social Service	29.91	60.10	ns	.01165	.01680	ns
	Extension	-179.60	77.81	.05	-.07117	.02175	.01
	Other				.01583	.02451	ns
Years since degree	1- 5	-	-		-	-	
	6-10	59.92	21.44	.01	.02513	.00600	.01
	11-15	95.21	26.86	.01	.03277	.00751	.01
	16-20	191.63	29.60	.01	.05728	.00829	.01

Variable Set	Category	Actual Salary Model Coefficient	STD Error	Significance	Log. Salary Model Coefficient	STD Error	Significance
	21-25	209.66	36.16	.01	.06094	.01011	.01
	26-30	183.58	38.84	.01	.05507	.01087	.01
	31-35	170.88	44.72	.01	.05042	.01250	.01
	36-40	176.42	54.35	.01	.06208	.01520	.01
	41-45	267.79	66.04	.01	.07281	.01846	.01
	46-50	120.82	136.37	ns	.04482	.03812	ns
Years at I.U.	1- 5	-	-		-	-	
	6-10	-39.38	20.63	ns	-.00832	.00577	ns
	11-15	-84.46	27.08	.01	-.02002	.00758	.01
	16-20	-155.66	29.50	.01	-.03746	.00825	.01
	21-25	-142.46	31.14	.01	-.03942	.00871	.01
	26-30	-95.60	47.26	.05	-.02644	.01321	.05
	31-35	-121.74	55.71	.05	-.02774	.01557	ns
	36-40	-100.46	103.85	ns	-.02623	.02903	ns
	46-50	181.60	246.44	ns	.04042	.06888	ns
		R^2 = .7259 F ratio = 97.657 (significant at .01 level)			R^2 = .7710 F ratio = 120.533 (significant at .01 level)		

NOTE: ns means not significant.

Using the log salary model, the coefficient for the female category was -0.03876 which implies that women's salaries tend to be about 4% less than those for men. In other words, we would expect a woman to earn 4% less than a man with the same type of appointment, in the same school, with the same rank, education, and experience. The absolute difference between salaries would depend on what rank, school, etc. was being considered. This coefficient was also significant at the 0.01 level.

The net effect of explanatory variables on monthly salaries may be translated into absolute monthly salary levels by calculating adjusted salary levels from the partial regression coefficients. Each adjusted salary level is merely the estimated salary for an individual in a particular category whose characteristics are distributed among all categories of all other sets of variables in the same proportions as for the entire population. The individual would be "representative" or "typical" of the population except for the set of explanatory variables in question. The adjusted salary levels are presented in Table III. Here, the "typical" woman earns $1273.94 per month while the "typical" man earns a monthly salary of $1372.12; a difference of $98.18 per month.

So far, our discussion has assumed that women are equivalent to men in terms of the variables included in the regression equations, or that their characteristics are "typical" of the population. In reality, of course, neither assumption is valid. Women's characteristics are not "typical" of the faculty as a whole. They are consistently over-represented in those categories associated with lower earnings and under-represented in categories associated with higher earnings. For example, our regression shows that faculty members who have administrative appointments earn $126.05 more per month than persons with faculty appointments only. Twenty-five percent of

TABLE III

1289 Bloomington Faculty
Adjusted Salary Levels

Variable Set	Category	Adjusted Salary
Appointment	Faculty	$1,329.41
	Joint	1,455.46
Rank	Lecturer/Instr.	1,028.94
	Asst. Prof.	1,140.14
	Assoc. Prof.	1,297.91
	Full Prof.	1,698.27
	Disting.Prof.	2,361.07
Sex	Male	1,372.12
	Female	1,273.94
Educ. Level	BA/BS	1,196.55
	MA/MS	1,280.24
	PhD.	1,394.60
	PhD's	1,416.55
School	Arts & Sciences	1,359.61
	Business	1,569.24
	Education	1,298.44
	HPER	1,300.64
	Law	1,613.28
	Library	1,442.58
	Music	1,278.68
	Social Serv.	1,389.52
	Extension	1,180.01
Years Since Degree		
	1- 5	1,248.42
	6-10	1,308.34
	11-15	1,343.63
	16-20	1,440.05
	21-25	1,458.09
	26-30	1,432.00
	31-35	1,419.30
	36-40	1,424.84
	41-45	1,516.21
	46-50	1,369.24
Years at I.U.		
	1- 5	1,404.90
	6-10	1,365.52
	11-15	1,320.44
	16-20	1,249.24
	21- 25	1,262.44
	26-30	1,309.30
	31-35	1,283.16
	36-40	1,304.44
	46-50	1,405.08

male faculty members also have administrative appointments, whereas only 11.4% of female faculty members have such appointments. Consequently, fewer women share in the higher salaries paid to administrators and for this reason, women's salaries tend to be somewhat lower than men's. Table IV illustrates these effects for the other explanatory variables in our model.

Thus, the $375.61 difference between average monthly earnings of men and women can be partially accounted for by the concentration of women in the lower paying categories of each set of explanatory variables and partially by salary differences attributable to sex alone. Of course, it may be argued that the reason these categories are lower paying is precisely because they contain a heavy concentration of women. The observed difference in earnings of $98.18 per month attributable to sex alone certainly supports this argument. On the other hand, there are several reasons for rejecting it.

There are strong institutional reasons for believing that lower earnings associated with lower educational attainment and lower rank where women are proportionally overrepresented are not a function of the proportion of women in these categories. Rather, they are a function of individual productivity, experience, and merit. The same argument cannot as easily be made when considering the overrepresentation of women in the lower paying schools of the University. Here it is not clear whether these schools pay lower salaries because they employ a large proportion of women, or whether women earn lower salaries because they teach in these schools. Additional analysis, however, suggests that there exists no significant relationship between the proportion of women in a particular school and the average salary paid in that school to an individual whose characteristics are distributed in the same proportions as in the entire population except for school (the adjusted salary level for school). On balance, then, it is probably true

TABLE IV

1289 Bloomington Faculty
Explanatory Categories by Proportion of Men and Women

Variable Set	Category	% Women in this Category	% Men in this Category	Partial Regression Coefficient
Appointment:	Joint Appointment	11.4	25.1	$ 126.05*
Rank:	Assistant Prof.	29.7	25.0	111.20
	Associate Prof.	17.1	23.0	298.97*
	Full Prof.	13.7	36.6	669.33*
	Distinguished Prof.	0	1.5	1,332.13*
Education:	MA/MS	49.7	19.5	83.69
	PhD.	40.5	71.7	198.04*
	PhD's	1.1	4.5	220.00*
School:	Business	0.6	8.3	209.63*
	Education	37.7	16.5	-61.17
	HPER	9.1	5.6	-58.97
	Law	0.6	2.1	253.67*
	Library	4.6	0.8	82.97
	Music	6.3	7.0	-80.93*
	Social Service	6.8	0.6	29.91
	Extension	1.7	0.6	-179.59
Years Since Degree:				
	6-10	17.7	22.2	59.92*
	11-15	16.0	14.5	95.21
	16-20	11.4	13.4	191.63*
	21-25	8.6	6.0	209.66
	26-30	7.4	5.7	183.58
	31-35	2.8	4.9	170.87*
	36-40	0.6	2.9	176.41*
	41-45	1.7	1.3	267.79
	46-50	0	0.3	120.82
Years at I.U.	6-10	18.3	17.9	-39.37
	11-15	7.4	10.2	-84.46*
	16-20	7.4	8.3	-155.66*
	21-25	9.7	8.6	-142.46
	26-30	1.1	2.9	-95.60*
	31-35	2.8	2.1	-121.74
	36-40	0	0.5	-100.46*
	41-45	0.6	0.3	-
	46-50	0	0.1	181.60*

*Indicates categories in which women are proportionately underrepresented.

that the distribution of women accounts for their lower average earnings and that their presence in a school has only a minor influence on the earnings in that school.

Analysis: Men VS. Women

The regression analysis for the whole faculty indicates the general order of magnitude of the difference between men's and women's salaries not attributable to rank, education and experience; it does not, however, tell us how these other variables determine the salaries of men and of women respectively. One coefficient for the rank variable indicates, for example, that full professors earn, on the average, $669.33 more per month than do lecturers and instructors, but does not show whether this is true of both men and women considered separately. Do women gain as much from promotions as men, other things being equal? The same question might be asked for each of our other dependent variables.

To answer these questions, we repeated the regression analyses for men and for women separately. In doing this, we encountered one important disadvantage - namely, that because the total number of women included in the sample is small, some of the results of the women's regression are not statistically significant. Nevertheless, some interesting conclusions emerge from our analysis, which is summarized below.

I. Type of Appointment

Men with both faculty and administrative appointments tend to earn more ($138.23 per month or 3.9%) than men with faculty appointments only. Women with joint appointments also earn more than women without, but the difference is much smaller ($29.57 or 1.2%) and is not statistically significant. Evidently, then, not only do proportionately fewer women hold joint appointments (less than 12%, as opposed to 25% of men), but those with joint

appointments do not gain significantly in economic terms.

II. Rank

Both men and women gain, economically, from promotion to higher academic ranks, as shown in the following table.

TABLE V

1289 Bloomington Faculty

Sex by Salary Gains Associated with Ranks Higher than Lecturer/Instructor

RANK	Amount	% Gain	Amount	% Gain
Assistant Prof.	$100.33	5.9	$176.43	8.3
Associate Prof.	261.96	11.6	348.40	14.6
Full Prof.	666.06	22.5	614.85	23.1
Distinguished Prof.	1320.64	35.5	n.a.	n.a.
Average Salary for Lect./Instr. (with other explanatory variables distributed in the same proportions as for the entire population)	$1067.37		$837.73	

N.B. all coefficients significant at the .01 level.

Both in absolute and in percentage terms, women gain more by being promoted to assistant or to associate professor than do men; however, they begin at a lower level as lecturers so that, even as associate professors they earn only 88% of what male associate professors earn. The gain associated with promotion to full professor is slightly higher for women in percentage terms, but smaller absolutely - a finding which reflects the fact that full professors' salaries vary over a much wider range than do salaries of persons at lower ranks. In general, in spite of the gains associated with academic promotion, women's earnings lag behind men's at all steps on the promotion scale.

III. Education

TABLE VI

1289 Bloomington Faculty

Sex by Salary Gains Associated with Advanced Degrees

Degree	Men		Women	
	Amount	% Gain	Amount	% Gain
Masters	$ 70.30*	3.2	$121.18	7.0
Doctorate	204.88	7.3	163.90	9.2
More Than 1 Doctorate	210.30	6.7	349.08	14.1
Average Salary for Batchelors (with other explanatory variables distributed in the same proportions as for the entire population)	$1244.22		$903.33	

All coefficients significant at the .01 level, EXCEPT those marked *.

The effects of holding advanced degrees on men's and women's salaries are similar to the effects of promotion, with one exception. Women gain more, absolutely and proportionately, from holding advanced academic degrees but, because their "starting level" is so much lower than men's, they never catch up. Women with a Ph.D. earn only 73.6% as much as men with a Ph.D.; even for men and women with more than one doctorate, the ratio of women's to men's salaries rises only to 86%.

It is interesting that our findings show that a master's degree alone is almost worthless for a man at I.U.; the gain in salary is small and, statistically, not significantly different from zero. For women, however, a master's degree is still worthwhile - probably because women tend to be concentrated in jobs for which an MA or an MS is still considered to represent adequate training.

IV. School

Our regressions for the faculty as a whole revealed important differences between the salaries paid to faculty members in different schools of the

University. Using the College of Arts and Sciences as our reference group, we found for example, that faculty salaries were substantially higher in the Business and Law Schools than in Arts and Sciences, whereas in some schools faculty earn less than in Arts and Sciences. The following table lists the other schools according to the difference between their average salaries and those in Arts and Sciences, ceteris paribus; it also shows the coefficients for men and women separately in each school. In general, the coefficients for women are not statistically significant.

TABLE VII

1289 Bloomington Faculty

Effect on Salary of Being in Schools Other Than Arts & Sciences, by Sex

School	All Faculty		Men		Women	
	Amount	% Gain	Amount	% Gain	Amount	% Gain
Law	$253.67	7.4	$271.27	8.0	$-26.18*	-2.1*
Business	209.63	5.9	209.70	6.0	42.29*	
Library	82.97*	3.3**	40.96*	2.0*	105.56**	3.6*
Social Service	29.91*	1.2*		0.5*		-0.8*
HPER	-58.97*	-1.2*	-64.36*	-1.2*	-49.86*	-2.4*
Education	-61.17	-2.0	-67.52	-1.9	-25.98*	-1.6*
Music	-80.93	-1.7**	-87.88	-1.9		0.5*
Extension	-179.59**	-7.1	-191.46**	-7.5	-92.83*	-5.1*
Avg. Salary in A & S w/ other explanatory variables distributed in the same proportions as the entire population	$1359.61		$1415.09		$1044.90	

All coefficients significant at .01 level except those marked with *.
** = sign. at .05 level.

Hardly any of the coefficients for women are significantly different from zero; of those for men, only law, business, education and music are significant at the .01 level. What this suggests is that women whose qualifications are the same in other respects, tend to earn the same average salary in all schools. They neither share in the gains which accrue to men

who teach in the law or business schools, nor are they apparently affected by the loss in salary which, for men, is associated with teaching in the schools of music and education. In the case of the Schools of Law and Business, the coefficients for women are not significantly different from zero because the numbers involved are so small; women do not share in the higher salaries earned in these schools because they simply don't teach there. It would be difficult to say, without detailed direct investigation, whether this is because these schools prefer not to hire women or because there are so few women applying for positions in these fields. Music and Education, on the other hand, both employ quite a few women; indeed, 38% of the women in our population held appointments in the School of Education alone (compared to 16.5% of the men in our population). In Education, at least, the high concentration of women appears to be one factor which explains the lower average salaries of women in general. Men are less apt to be employed in education; moreover, when they are, they earn more than their female colleagues since their average "loss" of $67.50 per month of 2% is measured relative to the salaries of men in Arts and Sciences, which are substantially higher than women's salaries in Arts and Sciences.

V. Experience

Our last two independent variables - years at I.U. and years since highest degree - may be regarded as rough proxies for professional experience and/or for seniority. Coefficients for years at I.U. were generally negative, both for the whole population and for men and woman separately. Only one of the coefficients for women and only about half those for men were significantly different from zero. The negative relationship between years at I.U. and average salary probably reflects the long-run growth in national demand for academic personnel and the relatively weak competitive position of I.U. in

that market. The University has had to pay higher and higher salaries to attract faculty in an increasingly competitive academic job market and has not been able to raise salaries correspondingly for personnel hired under less competitive conditions. However, there does not seem to be much difference between men and women in this respect; men and women whose qualifications are the same in other respects, appear to "lose" about the same amount as a result of prolonged employment at I.U.

In the case of salary differences associated with the length of time since an individual completed his or her higher education, however, men do appear to gain more than women. Length of time since degree is probably a better measure of professional experience than years at I.U., since it includes time spent in other professional positions. Moreover, it may be a better indicator of experience for men than it is for women, insofar as women have spent some of the time since completing their education engaged in domestic responsibilities rather than in professional employment. (We do not know for what proportion of the population this is true.) Therefore, it is not altogether surprising that the time elasped since completing one's education is associated with greater increments in salary for men than for women. In fact, only women who received their degrees between 16 and 35 years ago experienced any significant salary gain as a result; the average salaries of women who received their degrees 6-15 years ago or more than 35 years ago were not significantly different from those of women who "graduated" within the last 5 years, *ceteris* paribus. In the case of women who finished their education over 35 years ago, the numbers involved were too small to yield significant results; for the younger group, time spent outside of professional employment may have had a depressing effect on salary.

Comparison With Other Studies

We have already mentioned the fact that this study owes much, methodologically, to Melichar's study of the salaries of scientific and technical personnel for the whole country.[3] Melichar's data cover persons employed in government and industry as well as academic institutions, but are confined to specialists in the social and natural sciences. Only 6.6% of the individuals included in his study were women. He regressed the logarithm of salary on age, sex, highest academic degree, years of experience, type of employer, profession (e.g., anthropology, mathematics) and primary work activity (e.g., teaching, research), and found that:

> Being a women tended to depress salary 16 percent below that paid to a man. This net difference was about three-fifths of the gross relationship, the remainder of the latter being attributed to fewer years of experience and fewer advanced degrees among women. The net difference was highly significant statistically, and large enough to be important to those on the short end. The only reason that [the analysis] shows sex as relatively unimportant in explaining total salary variation is that only 6.6 percent of the respondents were women. (page 68)

Relatively speaking, then, the gap between men's and women's salaries is considerably larger for Melichar's study than for ours. The main differences between his study and ours, which might account for the different results, are probably 1) that he included a smaller range of professions - women may be relatively more discriminated against in scientific and technical than in other professions; and 2) that he included a wider range of employers - women may earn relatively less than men in government and industry than in academic institutions. Althernatively, other acadamic institutions may be more dis-

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[3] Other studies which cover the salaries of professional men and women have also found that women tend to earn less than men in similar occupations with similar qualifications, although the methods of investigation and the quantitative results vary from study to study. See citations in footnote No. 1.

criminatory in their treatment of women than is Indiana University. It does not follow, however, that the difference between men's and women's salaries at I.U. is unimportant.

Conclusions

Women earn less than men on the I.U. faculty, partly (though not entirely) because they tend to hold fewer advanced degrees, lower academic ranks and fewer administrative appointments, and tend to teach in schools where average salaries are relatively low. Even when women are compared with men of similar professional backgrounds and interests, however, they earn less; for the Bloomington faculty as a whole, there remains a net difference between men's and women's salaries of almost $100 a month which is not associated with measurable differences in their professional qualifications. Moreover, the fact that women are concentrated in lower paying categories suggests that for some reason the professional experience of women tends to be different from that of men: they don't "go as far," in terms of their own professional training, their academic rank or their participation in fields of specialization which the University values most highly, in economic terms.

These findings raise questions both about the professional aspirations of women and about their opportunities for realizing them at Indiana University. It is true all over the country that the proportion of women obtaining advanced professional and academic degrees has declined over the last 50 years, for reasons which are deeply rooted in the values of our society as well as the structure of the economy. (Cf. M.S. Gordon, "Women in the Labor Force," Industrial Relations, May, 1968) Consequently, a major reason for the small proportion of women among the holders of masters or doctoral degrees on the I.U. faculty is the small supply of such women nationally.

It is impossible to say, on the basis of our data, whether women are

underrepresented in the administration and in some schools at I.U. because few women seek such appointments or because these segments of the University are more reluctant than others to hire women. We also have no information on whether or not women are treated differently from men in the matter of promotion, or whether they are underrepresented in the higher ranks because they are less academically productive. Probably both types of factors operate; the University would certainly lose nothing by considering carefully whether or not its hiring and promotion policies are discriminatory.

However, the fact that women who do overcome whatever obstacles exist (both within and outside of the University) to improving their professional qualifications still earn less than similarly qualified men does suggest that there is a systematic bias in the University's methods of determining individual salaries which works to the detriment of women. A priori, it seems unlikely that the women who have survived both society's and the University's processes of selection are consistently less productive (in terms of the quantity and quality of their teaching, research and other professional services) than their male colleagues.

A PROFILE OF WOMEN IN THE I. U. FACULTY AND ADMINISTRATION

		Number	% Total in Category
Faculty & Administration		281	16.8
Faculty only		161	15.3
Rank:	Instr./Lectr.	71	29.4
	Asst. Prof.	34	15.5
	Assoc. Prof.	31	10.2
	Full Prof.	25	5.4
School:	Arts & Sciences	75	9.6
	Business	2	2.0
	Education	68	26.8
	HPER	16	19.8
	Law	2	7.7
	Library	14	54.0
	Music	14	12.0
Education:	Bachelors only	41	25.3
	Masters only	154	34.4
	1 Doctorate	76	8.0
	more than 1 Doctorate	3	5.4
Years at I.U.	1 - 5	153	18.9
	6 - 10	43	14.1
	11 - 15	25	14.4
	16 - 20	21	15.1
	more than 20	39	15.9
Average Monthly Salary		$ 933.22	72%